
Military Medicine at Little Bighorn

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The 597 men of the 7th Cavalry Regiment of the US Army, with 35 Indian scouts, and 15 quartermaster employees and civilians, under the command of Lieutenant Colonel George Armstrong Custer met with disaster on June 25 and 26, 1876, on the bluffs overlooking, and in the valley along, the Little Bighorn River in southeastern Montana.¹ The story of the battle is well known, but less known are its medical aspects. The article reviews the 7th Cavalry's medical resources, medical personnel, equipment, types of wounds encountered, and mortality rate. Of interest is how medical care had changed from that of the Civil War, a decade earlier. Briefly discussed are why and how the battle occurred.

HISTORIC SITUATION

Immigrants as they streamed across the West, crossed the traditional buffalo hunting grounds of the Plains Indians, sometimes causing loss of life and provoking pitched battles. The Bozeman Trail, along the upper branch of the Platte River, was one such point of conflict. Army posts established along the Trail to offer protection were frequently undermanned, leaving settlers at risk for attack and death. One attempt to deal with the volatile situation was the Fort Laramie Treaty of 1868, where US Commissioners and a variety of Sioux chiefs and subchiefs signed a treaty to allow for peaceful use of the Bozeman Trail in return for Indian reservations. This encompassed almost all of present-day South Dakota west of the Missouri River, including the Black Hills, and other considerations. The Sioux were to allow the railroads to build unimpeded across the country and agree to cease attacks on travelers and settlers. In compliance, the majority of the Sioux settled on the reservations to become dependent on government food and services, but Chiefs Sitting Bull, Crazy Horse, and Gall refused to sign at Fort Laramie and remained on their traditional hunting grounds.

In June 1874, Custer was ordered to lead an expe-

dition of the 7th Cavalry into the Black Hills of present-day South Dakota "to obtain the most information in regard to the character of the country and the possible routes of communication through it." This was sacred country to the Sioux and, then, part of their reservation. When gold was discovered there, prospectors entered the Black Hills in droves, irrespective of the risks, which led to more violence and death. An early attempt by the government to buy the Black Hills from the Sioux was thwarted by Sitting Bull and Crazy Horse. In December 1875, President Grant ordered all Indians back to their reservations by January 31, 1876. When they failed to do this, they were deemed hostile and plans were made to attack them.

Custer's regiment was part of a larger force designed to drive the Sioux and Cheyenne back to the reservations and away from their favored buffalo hunting grounds. There was a pincer movement to close in on the Indians, with General George Crook to come up from Wyoming from the south, Colonel John Gibbon from Montana on the west, and General Alfred Terry from the east.² Custer, under the Terry command, left Fort Abraham Lincoln near Bismarck on May 17 going west. Crook coming from the south was turned back by a hostile force led by Crazy Horse at Rosebud Creek in mid-June, leaving only Gibbon's and Terry's forces to close in on the Indians.

Whether by rashness, lack of military intelligence, or stupidity, Custer entered the fight alone on June 25. After crossing the mountains between the Rosebud and the Little Bighorn Rivers, he encountered an Indian village in the Bighorn Valley that was about 3 miles long by 1 mile wide and contained an estimated 2,000 to 3,000 warriors, and many more women and children. Custer, known for his daring assaults in both the Civil War and in previous Indian battles, did not wait for Colonel Gibbon's army to arrive from the northwest. Fearful of losing the element of surprise, he pushed ahead with the attack. Taking 5 of the 12 companies with him to their deaths, he rode along the bluffs overlooking the Little Bighorn River, with the probable intention of attacking the village downstream. He sent Major Marcus Reno

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with three companies across the shallow river, which was 30 yards wide in places, to attack the village from the south. He ordered Captain Frederick Benteen, with three companies, to scout for escaping Indians toward the Bighorn Mountains to the west. Custer apparently believed that the Indians would not fight, but would make every effort to escape from his lightning assault. He assigned one company to escort and guard the pack train in the rear.

Custer's troops entered the battle better armed than their opponents. Troopers carried a 7.5-pound Model 1873 Springfield "Trapdoor" carbine with an effective range of 500 to 600 yards, along with a Model 1873 Single Action Colt .45 revolver known as the "Peacemaker" or the "thumb buster," sighted for 25 yards.³ Indians carried a variety of weapons, most with shorter range and less accuracy, including clubs and arrows for close combat.

MEDICAL PERSONNEL

The 7th Cavalry went into battle with three surgeons, one regular Army, and two on contract.⁴⁻⁶ Dr George Lord, the regular Army surgeon, was 30 years old, born in Boston and grew up in Maine, and graduated from Chicago Medical School. He was known to be ill on the day of the battle and it was questionable if he could go with Custer's five companies but, when asked, he refused to allow another surgeon (Dr Porter) to take his place, and so he rode to his death.

The two contract surgeons were Dr James DeWolf, a native of Pennsylvania, 33 years old, and a graduate of Harvard School of Medicine, and Dr Henry Rinaldo Porter, from upstate New York [Lee Center], 28 years old, and a graduate of Georgetown University School of Medicine. Both contract surgeons rode with Reno's battalion across the river. Each had an orderly to carry supplies but no trained assistant. Neither surgeon rated a uniform because they were on contract status. We know that Dr Porter wore a linen duster over his clothes into battle. This garment had become fashionable for travelers on the railroads to protect their clothes from the dirt and cinders in the days of open car windows. Porter's duster appeared to attract the attention of Indian marksmen and he was warned by chief guide "Lonesome Charley" Reynolds moments before the latter took a fatal bullet.⁷

When Reno's men met overwhelming force in the valley and were turned back in a rout, they rode back

across the river and up a steep bluff. Indians on all sides poured rifle bullets into the troopers and, in some cases, pulled them off their horses and clubbed them to death. Porter told of treating one soldier with a chest wound who pleaded with him to save him, but evacuation of the wounded was out of the question. Porter later recalled, "My horse was rearing and plunging, and I had all I could do to hold him. The Indians in their mad pursuit of our troops did not notice me in the timber. They were passing within 10 feet of where I was. I placed laudanum on the wound and bandaged it as best I could and again mounted my frightened horse."⁸ Several men without mounts hid overnight in the woods, enabling them to reach safety on the bluff under cover of darkness. Dr DeWolf was killed while scaling the bluff on his horse during the rout. This left Dr Porter, whose horse carried him safely up the bluff, as the only surviving surgeon of the regiment. Reno considered it to be a charge to a defensible position, others a retreat. This issue led Reno to request a court of inquiry in 1879 to clear himself of charges of cowardice.

At bluff top, a defensive perimeter was hastily developed by the survivors of Reno's and Benteen's troops and those with the pack train. Within the perimeter in a saucer-shaped depression near the center, Dr Porter established an open field hospital on top of canvas tarpaulin. A red cross marks the site today. At first some of the wounded tumbled off their horses into the designated medical area. Later men were brought in as they were wounded. Water soon ran out. Although they were within sight of the river, no water could be gotten without great personal risk. The wounded were in agony with thirst in the fierce Montana heat before volunteers could retrieve water. Fifteen of these water carriers were later awarded the Medal of Honor for their bravery.

MEDICAL SUPPLIES

How did military medicine and surgery differ from that practiced in the Civil War a decade earlier? The major advance was based on the work of the British surgeon, Joseph Lister (1827–1912).⁹ Learning of Pasteur's work on fermentation in 1865, Lister applied this to the problem of wound infections and successfully used carbolic acid to dress the wound of an 11-year-old boy in Glasgow who had sustained an open fracture of his left leg when crushed by a cart wheel. He published his results in a series of articles in the *Lancet* in 1867. This began the

concept of “antiseptic surgery” before bacteria had been seen or proved to cause infection.

When Dr George Lord, the senior surgeon on the expedition with Custer, took the Army examination for surgeons on January 11, 1875, he was asked to describe the antiseptic treatment of wounds and to compare its results with other dressings. His answer gives us insight into the general understanding of surgeons about the concept at the time. On his examination he wrote in reply, “The antiseptic treatment of wounds is based on the theory that certain agents called antiseptics have the power of destroying certain organic germs said to exist in the air and to be injurious to the process of healing—in my opinion it is injurious to freshly granulating surfaces.”⁵ It would be another 10 years (1886) before “aseptic surgery” would develop, based on steam sterilization of equipment as advocated by Ernst Von Bergman (1836–1907), professor at Berlin.⁹

Lister’s other surgical innovations arising from his studies on inflammation and infection were the introduction of chromic catgut sutures stored in carbolyzed oil and popularization of rubber drainage tubes. These items and carbolic acid were available to the surviving surgeon, Dr Porter, for use at Little Bighorn. He went into battle with an amputation kit made by J Tiencken of New York, and a US Army field surgical chest no. 2 that held medications, surgical instruments, bandages, and other supplies. The wooden chest, about the size of a small trunk, was strapped on the back of a mule. When fully stocked the supply box contained all of these items, but we can be sure that they were exhausted early in the battle (these items carried by Dr Henry Porter may be seen at the Museum of the State Historical Society of North Dakota, Bismarck, ND). Porter had another item listed in the supply chest that would not have been available to a Civil War surgeon, an Esmarch tourniquet, to secure a bloodless surgical field. Friedrich von Esmarch (1823–1908) introduced this elastic bandage during the Franco-Prussian War (1870–1871).⁹

SURGICAL CARE

The wounded came in to Dr Porter’s makeshift field hospital faster than he could attend them. Horses were killed and fell into the wounded men. He later recalled, “We had been fighting in the boiling sun all day [June 25] without a drop of water, and the wounded were begging for a drink. I had some brandy with me, but I

told them that it would make them worse. They insisted on having it anyway.”⁸

A number of soldiers recalled Porter’s untiring efforts in caring for the wounded. Captain Benteen wrote, “The hospital was established at the upper rim [of a saucer-like depression], and was about as safe a place as there was around the vicinity, the blue canopy of heaven being the covering: the sage brushes, sand being the operating board; but the stout heart and nervy skillful hand of Dr Porter was equal to the occasion.”¹⁰

Private John F Donoughue, Company K, wrote, “We had with our part [of the regiment] two physicians Drs DeWolf and H R Porter. Dr DeWolf being killed early on the 25th, left the whole responsibility on Dr Porter, and I must say I never saw or heard of a man who acted a braver part than this same Dr Porter—at work incessantly, taking off a limb here, helping in other ways men otherwise wounded and never flinching” (*Bismarck Daily Tribune*, January 17, 1888).

On the battlefield, Dr Porter amputated Private Michael Madden’s right leg below the knee. Prompt amputation for compound or open fractures, had been military medical doctrine since the Napoleonic Wars, when it was advocated by Baron Jean Larrey (1766–1842).⁹ Madden had sustained an open fracture of the ankle when shot while attempting to get water. By the time of his amputation, all narcotics and anesthetic agents were gone, leaving him only “sanitary alcohol” or brandy for relief of pain. The amputation was done to prevent, if possible, infection, gangrene, and death. The operation was probably performed by the “circular method” rather than the “flap method,” in the interest of time.¹¹ It was successful despite the high mortality rate for a primary amputation in a military setting (10% to 30%). The patient was given a battlefield promotion to sergeant and discharged from the post hospital on September 13, 1876. He was known to be alive at least 10 years later.

EVACUATION

The battle ended late on the afternoon of June 26, 1876, when the Indians spotted the relief column of General Alfred Terry and Colonel John Gibbon approaching from the north; “walking soldiers,” the Indians called them [infantrymen]. Chief Red Horse later said, “The Indians can’t fight walking soldiers; they are afraid of them, and so we moved away.”¹² The whole village withdrew. The soldiers arrived at 11:00 AM on June 27, bringing with them two surgeons, Dr J W Williams and Dr H

O Paulding, to assist the “overburdened” Dr H R Porter.¹ The dead were buried on June 28. The wounded were evacuated the next day by mule litters and travois. Forty-three wounded boarded the *Far West* early the next morning, where they lay on the straw- and tarpaulin-covered decks for transport.¹ The ship reached Bismarck late on the evening of July 5 and Fort Abraham Lincoln at 2:00 AM on July 6. There Dr H R Porter and Dr I H Ashton turned them over to post surgeon J V D Middleton.

An analysis of the wounded under the care of Dr Porter shows that there were 78 wounds in 68 individuals. Not included in this number were those killed outright in the hilltop fight, Privates Meador, Gebhart, and Voight. Of course, all who failed to reach the bluffs of the Reno-Benteen Battlefield were killed. No prisoners were taken on either side. Wound sites are listed in Table 1.

OUTCOMES

Of the 68 individuals wounded, only 6 died, for a mortality rate of 8.9%, a very favorable rate. Of the six deaths, one died on the bluffs during the battle on June 26, three died on the steamship *Far West* on July 2 and 3, while being evacuated, and two died at Fort Abraham Lincoln Hospital on July 21 and October 4.

Abdominal wounds were especially lethal. Two of the three receiving such wounds died. Private George Lell died on June 26 shortly after a gunshot wound to the abdomen. Private William George died on the steamship *Far West* 8 days later, after “suffering terribly” from a “bad shot” to the left side.¹³ The one who survived is worthy of mention. Private Francis Reeves was knocked off his horse when struck by a bullet that passed through

his belt into his abdomen in the valley fight. He regained his saddle and before crossing the river to climb the bluff a bullet struck his upper thigh. One of his friends wrote about him, “We knew that he was doomed to die, therefore we went to him with offers to write his mother.” He refused the offer but requested that his friends retrieve his tobacco from his saddle pockets. He survived and was known to be on duty at Fort Lincoln 2 years later.¹³ The bullet must have made only a superficial wound in the abdominal wall after passing through the patient’s belt.

Corporal George King, shot through the shoulder, died on the *Far West* on July 2. No other information is available about his death. Also, Private James Bennett, shot through the spine with resulting paraplegia, died July 5 on the ship *Far West*.

Two of six shot through the hip died in the hospital at Fort Abraham Lincoln. Post surgeon J V D Middleton recorded in his log of July 21, 1876, the following: “Private David Cooney Co I 7th Cavalry Gunshot wound ‘right hip’ died today of Pyaemia.”¹⁴ The other patient with a hip wound would die 2½ months later.

On August 29 Middleton wrote: “Operated on Corporal William [M] Smith’s arm assisted by Dr Redd. The right elbow joint was resected. Condyles of the Humerous and about 1½ inches of shaft were removed. There was excessive hemorrhage and shock, both of which combined with the prolonged exhibition [sic] (“inhibition”) of Eating came near proving fatal. He however survived under the combined influence of stimulants per anum and electricity.” Dunglison’s *Dictionary of Medical Science* of 1874 states: “Electricity is used medically as an excitant. It has been occasionally used with success in paralysis, rheumatism, accidental deafness, amaurosis, amenorrhea, and so forth, but it is not extensively used. It may be communicated by means of the electric bath”¹⁵ Corporal William M Smith survived, was discharged from the Army on disability in February 1877, and lived until 1921, when he died of a kidney sarcoma at 69 years of age.¹³

On September 13, 1876, Dr Middleton noted in the log that he “operated on Private [Frank] Braun, M Co of Cavalry, putting him under the influence of Ether, probed his wound with finger and _____, extracted two pieces of cloth, made a counter opening near tuberosity of ischium from which there was some arterial hemorrhage, and straightened him out on his back.”¹⁴ Braun died October 4 at the Fort Lincoln Hospital. At his

Table 1. Wounds at Little Bighorn

Wound sites	n
Legs and feet	23
Arms	12
Head and neck	10
Shoulders	9
Hands and wrists	7
Hips	6
Abdomen	3
Back	3
Buttocks	2
Chest	1
Spine	1
Not specified	1

death Dr Middleton excised portions of the infected femur and the innominate bone and sent them to the US Army Medical Museum, Washington, DC, where they are now part of the collection of the National Museum of Health and Medicine, Armed Forces Institute of Pathology (written communication with S Solomon, Public Affairs Officer, National Museum of Health and Medicine, AFIP, Washington, DC, September 6, 2003).

Of Custer's command, 268 were killed or died of wounds and 62 were wounded and survived. Of the known 647 participants in the command, 51% were killed or wounded. How many Indians were killed? On which side, you may ask, because there were Indians on both sides. Four Indians were killed and two wounded on Custer's side and are included in the numbers here. These were guides, scouts, and interpreters. On the opposing side, the numbers vary, but all are less than Custer's total casualties. Crazy Horse claimed that 68 were killed and 60 wounded, of which 60% died (*Bismarck Triweekly Tribune*, June 11, 1877). This would total approximately 96. Chief Gall claimed 43 died in all, saying, "A great many crossed the river and died in the rushes. They died every day. Nearly as many died each day as were killed in the fight."¹⁵ Lakota Chief Red Horse in 1877 said 136 Sioux had been killed and 160 wounded.¹⁵ Based on these very inexact estimates, it seems reasonable to say that fewer than 150 of the opposing Indians were killed.

Of interest, there were no cases of tetanus or septic gangrene. The latter was a major problem in World War I, which was fought in the cow pastures of France and Belgium. Perhaps the arid climate and relatively uncontaminated soil were responsible. There were no recorded rattlesnake bites at the battle and no recorded cases of heat exhaustion, despite intense heat and water deprivation. There were no arrow wounds in the survivors. Some 25 to 30 of the bodies found away from the defensive perimeter had been pierced with many arrows, suggesting postmortem mutilation.¹⁶ Chief Gall recalled that, "we soon shot our cartridges, and then shot arrows, and used our war clubs."¹⁵ The only living thing to survive from Custer's five companies was a horse named "Comanche," which had been ridden by Captain Myles Keogh of I Co and was found riddled with bullet wounds and arrows. The horse rode on the open deck of the *Far West* along with the wounded soldiers on

return to Fort Abraham Lincoln and lived an honored existence for a number of years at Fort Riley, Kansas. After death he was preserved by taxidermy and is now in the Natural History Museum at The University of Kansas, Lawrence.

In conclusion, Plains Indians' warfare, like their hunting, was based on close contact and individual acts of bravery. They used guns primarily in the short range while riding ponies and horses. There were no suicidal charges, no sophisticated tactical evolutions, and no night fights. Once the defensive perimeter was established atop the bluffs, the soldiers were able to keep the Indians at a distance by their superior weapons, better marksmanship, and access to sufficient ammunition in the pack train. It is strongly suspected that Custer's five companies soon ran out of ammunition and this led to their speedy demise. Lakota Chief Red Horse stated in 1881 that "had the soldiers not divided I think they would have killed many Sioux."¹⁷

With distance between combatants maintained, Indian weaponry was much less lethal. Twenty-four of the 68 wounded soldiers promptly returned to duty after injury. The low mortality rate for the wounded cannot be attributed to medical care. Except for the dramatic battlefield leg amputation, almost all other care was noninterventional, ie dressings and pain relievers, when available. For the most part, this allowed for nature to take its course. Perhaps the medical axiom, "First of all, do no harm," had its greatest application in this battle.

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